

Dr Duncan questions for *How to Live to 100* feature

1. What do those who live longer, particularly to 100, have in common?

That's a great question, and the answer depends in part on who you ask. Different researchers have identified what they believe helps people in different parts of the world reach that magic number, but they don't always agree. What centenarians *do* (mostly) have in common are three approaches to life:

- They live in community settings and have strong family ties. A sense of belonging, of being valued, of giving and being loved is vital for health and longevity. As Seal sang, loneliness is the killer.
- They live a low-stress existence. On one Greek island, for instance, residents don't wear watches because time and deadlines aren't important.
- They are not obese. Note that being scrawny is not the answer either – maintaining muscle mass is one of the most important goals for ongoing health.

2. What foods should we eat and what foods should we avoid if we want to live longer?

Avoid sugar – and, as much as possible, sugary carbohydrates, by which I mean white pastas, white rice, white bread and yes, sadly, cakes and biscuits. Also steer clear of low-fat products, because 'low-fat' means the manufacturer has added sugar to make it taste less like cardboard.

What are the dangers of sugar and sugary carbohydrates? Sugar inflames the arteries, which starts the process of blocking arteries and causing heart attacks and strokes. Sugar upsets production of the hormone insulin, leading to weight gain, diabetes and cancer. Sugar even switches off our longevity genes leading to shorter lives. Everything else after sugar is of secondary importance – don't eat processed fats and don't fry food in sunflower oil; do eat pasture-fed meat and organic vegetables. Whether you are a vegan, a vegetarian or an omnivore is your choice – if done well, those eating plans are healthy; if done badly, they can be dangerous.

3. Is it worth taking supplements and, if so, what should you take?

In recent years we have realised that our body's cells have their own powerful, built-in antioxidant system – and that swallowing too many antioxidants (i.e. vitamin tablets) each day might dial down that system and leave us vulnerable to free-radical damage. That said, taking a good-quality multivitamin (like Solgar or Metagenics brands) twice weekly is still useful for many people, given today's diets.

I take vitamin D3 regularly – it's involved in many of the body's functions, and most people's levels of it are low. Glutathione is a powerful detoxifier, which helps the liver to get rid of toxins, and in this age of plastics and pesticides, the liver needs all the help it can get. Cruciferous vegetables like broccoli are a good source of what the body uses to make glutathione.

4. What's the worst thing we do that speeds up the aging process?

Another good question whose answer depends in part on who you talk to. For my money, the answer is stress – it exhausts our immune system, inflames the body, destroys the brain and breaks down the ends of our DNA. I go into this in much more detail in my book *Younger for Longer*, where stress alone takes up an entire chapter.

Briefly, though, by 'stress' I don't mean the fright you get when the number 63 bus nearly runs you down – I mean the ongoing negativity of the news cycle, the work pressures of modern life, wasting hours on social media, that sort of thing. We are so overstimulated that we forget just to sit, read a book, play a guitar, or play a family game. I can't remember the last time I enjoyed the luxury of saying: "I'm bored!"

5. Can the ageing process really be slowed, and do you believe there will be an anti-ageing pill in our lifetime?

For a long time, experts believed that there wasn't much we could do about ageing. Research has changed that view, showing that tweaking genes or using a calorie-restricted diet could help other animals to live longer *and in good health*.

Take calorie-restricted diets: that approach works because reducing our calorie intake dials down the insulin response and turns on a raft of longevity genes. Exercise is also important in that respect. As for the anti-ageing pill: it's not available yet, but I suspect in a decade or two we could have pills that turn on our longevity genes. In the meantime, get out and exercise!

6. What else is being developed to slow the aging process?

A vast amount. Two areas to watch over the coming years are those involving stem cells and CRISPR. We are close to the stage where stem cells can be used to grow organs. CRISPR is the technology that allows us to cut out bad DNA and replace it with useful DNA.

7. Is it possible to reverse ageing or is it only possible to slow it down?

Again, it depends on who you talk to. In my field we work to slow the ageing process. If we consider that the average person should probably live to 100 and some people could live to 120, then there is room to improve on the current developed world average age of 79. We still have a lot of work to do to help people live healthily to 100 and then die relatively peacefully – and without that decades-long decline.

8. Should we want to live longer or is there an argument for this possibly stunting evolution?

I think we should want to live longer – it's most people's default setting – and medicine has helped tremendously in that goal. As a child I had asthma and bronchitis, and had I been born a century earlier I would likely have died in childhood. But with inhalers and antibiotics I can lead a normal life (admittedly with the potential to pass my poor genes on to the next generation!)

Living your best life so that you enjoy today and are healthy in old age does not stunt evolution, in my view, but it does mean we will end up with more elderly people than young working people. Unless countries rethink what retirement means – and change their approach to the three-stage 'education-work-retire' life – that will put a huge strain on pension funds and healthcare systems.

9. Are there any visible or physical signs that you're more likely to live longer?

Yes! When researchers looked at healthy 100-year-olds they found:

- They typically looked 10 or 20 years younger than their chronological age.
- They had good muscle mass (this is the most vital feature of an elderly person in good health).
- They lived independently.
- They lived in community with friends and family.

- They were mentally sharp and inquisitive.

10. What are your five top tips for staying younger longer and increasing life-span?

- Get enough good-quality sleep. Most people need at least eight hours sleep a night – and if you think you need less then you are storing up long-term health problems for your brain and your body.
- Minimise stress. My three destress tips are: learn to say ‘no’; don’t sweat the small stuff; find five things each day that you’re grateful for.
- Exercise every day – the health benefits are countless.
- Avoid toxins – these could be excess alcohol, car fumes, pesticides or toxins from plastics.
- If you are tired every day or your mood is constantly low or you are getting repeated infections, then there is a problem. Find it and fix it.

